Notebook Series -- Pocket Notebooks
Notebook, PN-17-04-27

The one dated entry in this pocket notebook is from April 1917. The book was used by Edison, probably during the period April-August 1917, for notes pertaining primarily to war-related experiments. Included are experiments on sound detection devices and other means of locating submarines. There are also references to Edison's work on a "hydrogen detector" that would indicate the presence of dangerous gas in submarines and a "kite rudder" that would enable Allied ships to turn more quickly in case of an emergency. Some of the comments are of a more speculative character such as the idea of using cocaine, morphine, or some other "paralyzing narcotic" in bullets. In addition, there are notes on disc record experiments, an idea for a hornless disc phonograph, and a few remarks about the "Fleming valve" (a vacuum-tube diode invented by John Ambrose Fleming in 1904). Some entries appear to be transcriptions of entries from PN-16-02-15. Among the employees who assisted Edison in his wartime research were Isidor (Jerry) Chesler, Absalom M. Kennedy, William H. Knierim, and Benjamin Liebowitz. Employees mentioned in connection with disc records include William W. Dinwiddie, Archiebald D. Hoffman, and Josef Miller. The pages are unnumbered. Approximately 150 pages have been used.

April 26th 1917

Projectile fire Calcium Carbide & Water
15 miles light up to see Enemy ships

Signalling by Searchlights, several
messages simultaneously on

Bombs from flag ship, nights,
up in air displaying signals or
give out sound data & flashes

Smoke ring on top of Funnel & Bridge
to give direction & speed of
wind

Arrange some reversible
goggles, men wears continuously
with much subdued light
where why range finder part sys
there & dark current goggles
(which item) part Extension on
Range finder to stop big wear
& glare

with 100 ft meat can see horizon
17.4 miles, with 8½ ft mast [illegible]
21.34. less haze & better weather
see [illegible]

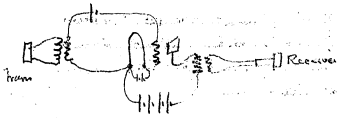
Aeroplane projectile, wings 1 3/4 wide
22" long holds up 850 lbs (12)
12" gun projectile at Vel of 2500 ft
sec

Vacuum lamp.
Edison effect to affect position

Clarke, Ordnance McWhorter Chief Submarine
Libby Elec Bklyn Navy yard

Bentons Ordnance & Gunnery Coulsons
allusions to wind mill projectiles

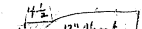
Pressure Wax in 14" gun 20 tons
Sopp work - 7 tons at Muzzle
Usual pressure 17 tons -

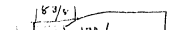


One stage Audion - no distinct Commutation
Mathes, diagm.

Windrus of 14" shell at 2600 ft sec in
3030 lbs. Thus sectional shell 4 ft sec

Coast Def shells





Muzzle for absorbing Explosive gases
shaped absorb perceptibly CO_2 +
dust of explosives + free Nitroglycerin.

Dr Chas S Hastings 248 Broadway
at New Haven, Breathers Lenses
Expert.

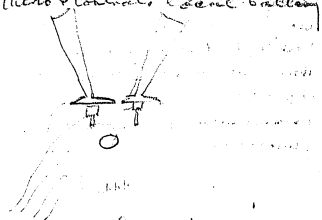
Roll of big war ships about 15 deg sometimes 20° in a hurricane, Vibrating or Roll of ship 14 & 15 seconds.

Throw sun in eyes of gunners or Spectlum range men by a Myriad of Mirrors at every angle & continuously changing

Perhaps our projectiles just before firing should have a small plug pulled & a charge made so if it falls short it will explode after sinking 20 ft, might do damage where nothing else missed armor or failed penetrate.

Carbon Balls

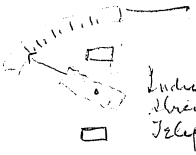
Carbon balls, wires from phones increase or decrease resistance + this causes battery to be added great variety Experiments possible CuS Balls - with Silver or platinum Iron, Bi Sb & Ag balls Selenium Each pair action of waves makes Micro + contacts Local Battery



switches to Connect opposing + detect by difference

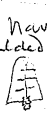
Put on switch on receiver of Indicator phone on ship

Arizona has 100 phones + 20 Circuits Maximum phones on one circuit is 10



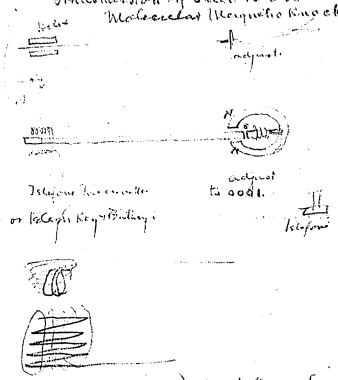
Induction to measure strength of Telephone lines

14" Naval projectile hydraulically moulded point of projectile.



Good range for Torpedo work is 500 yards or less but gunners should be shelled Enough to strike Submarine at 5000 yards

Transmission by steel cables Molecular Magnetic Ringlets



Cord wound around closed to guns by Hooks -

Dawson reports side wheel steamer 1500 yards away sent waves that reached him in about 5 min. first waves rocked boat violently. By time waves reached him steamer was mile away
after 1st set swells there was a quiet interval then came 5 distinct sets of swells 4 or 5 waves each with intervals between each set, after this water was rougher for some time than it was before steamer passed either wind was low
Boatman says he has known this section to be disturbed for an hour after steamer passed says the first & largest set is waves and the 3 or swells. Says other swells were stern swells
The stern swell goes in direction of boat but spreads out

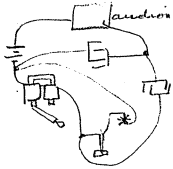
This -

Pendulum making over & back

length	9.78	for 1 per sec
	1.087	3 per sec
	1.29	2.75 sec
	.92	3.25

1 sec 1 way 39.12

Knicrums plan-apparatus made



Resonance $2\frac{1}{2}$ per sec up to 100 per second –

Aeroplane at 100 miles per hours makes at least 1500 Rev p min
They use 6 8 & 12 cylinders
The 8 is double 4 & 12 is double 6
#12 is 150 sec #8 100 sec #6 75 sec

Diameter of largest propellor on Submarines is 55 inches
Pitch 45 3 Blades

Range finders are only on light

Device to find continuously the speed of enemy ships so can fire torpedo accurately — Liebowitz has it driven out

Boring by internal screw sectional pipe Conveyor type for trench work

Use very high note emitted from headquarters to telegh to trenches
Men hearing funnel resonators
also by heliograph, also Ground waves magnetic molecular kick

Electros for hearing messages + Dappers + movement of artillery + troops + finding big guns
Microphone + Wireless Audiograle

OHJ

Hammering outside of trench
Sounding board side of trench, also
deep dropper for telegraphing with
large Piano Sounding board —
Auction, Signals by a mechanical
Oscillator at trench & Resonator
at headquarters

Machine guns coilralled at
a distance with an Exploder to
prevent Capture or Control Combine
with Conning tower & trench for
Escape

Our tuning Record makes
435 Vibs Sec

Wrecking Co says in blue water
in bright Sun thin divers can see
dimmly 150 ft down, Can
see shadow of Vessel above
in Cloudy day see 50 to 60 ft

Want device on submarines
to locate another Vessel without
rising —

Euphos glass & pechiches absorb
Ultra V & Violet & part of blues
Can see sharper

Storage battery built like a
Condenser 003. NiOH pasts, paper,
Iron pasts, paper & so on for
Enormously rapid discharge for
Small torpedo —

Tungstic Acid chalk Very
smooth Use KOH, takes a lot
(Chalk before) - also try powdered
Tungstic Soda slight moist &
Mould, Can use H_2SO_4 with
Tungstic Acid cylinder

Try Carb Lithia

Wanted Range finder to show position + height of aeroplanes

Microfone Bourbon 6 cells
·027 dia 10 of them weigh
1·3 Mfd

NiO_2 apparently dont oxidize
now in Alkali & falling at
45° Fahr or lower Iron
needs a Catalyzer like Pt
perhaps Hg should be left out
perhaps a little iguite lamp
black should be heated with
the iron

Wake of a submarine perfectly
apparent in all but heaviest
seas when submerged 80 ft
down even when observer
dead aft or in line with
submarines travel oil
globules continuously come up
Dubm seen 150 ft deep at
Gibraltar by aeroplane only
500 ft high, big black buoy

150 lbs TNT gives at 110 ft
260 lbs pressure per sqr inch
on a submarine, a subm
can stand 150 lbs

Small torpedo 5 ft long 6"
dia - 15 lbs TNT expelled
by light swivel gun held to
shoulder, now being developed

Try transmission of waves & shocks in Earth & rocks

Miller put cords 12 Rosin Recorded in your room & 12 in Hayes room with dates and sums of the records

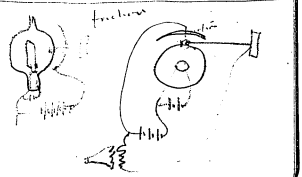
Jessenden showed clear as 10 pounds by his co radiation

Resistance due to Inductance is the square of the turns Magnified alot being the Decimal

1 Turn 1 ohm 1 ohm Inductance
10 " 10 " 100 " "
& so on

Straight Induction Coils very inefficient as it takes a lot of Current to build up the lines Closed transformer Coils far more efficient
Best to have largest cross section of iron shown was & smallest Circle possible & yet get the wire on, takes very little Current to throw out the lines -

Try hard pressed Resinate of Lead on Violin strings



Best Drainage 50cc Straw oil
50cc residue from distilling
Solvent Naphtha.

Vol of Sound 10 observers
1088 ± sec at
0 centigrade —

Value of Measuring Box
on 3 Voltage Checkpoint —

0. on box all the Current			100 %
2			77 %
4			62
6			50
8	41.5		
10	33		
12	27	44	.8
14	22	46	.65
16	17	48	.52
18	14	50	.41
20	11	52	.34
22	9	54	.27
24	7.5	56	.21
26	6	58	.16
28	4.75	60	.14
30	3.75	Second Box	
32	2.9		
34	2.9		
36	1.9	710 — times	
38	1.5	10 Either	
40	1.25		
42	1.00		

Capt J K Robson Newport RI
best man on torpedoes

Spot on eye front of periscope
Cut off opens, searchlights etc

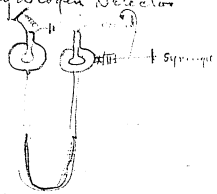
Find two liquids both placed
in an explosive shell the
spray mixed by explosion make
a cloud that remains long
in the atmosphere

Make submarines instead
of Celluloid make fine
grade of shellac mixed
with & pressed between cold
rollers, also tiny gutta
percha

Remote Mag when it suddenly
changes MP gives a change
Recover it by cord & see
what its MP is –

MP Res Mag – (poor qual) 257° fahr
Res lead explosions at 288° fahr

Hydrogen Detector



Demonstrate tiny higher density
in Copper plate etc

Peroxide Co. Mn. Fe or Cu
dissolved in electrolyte of
Alkali Cell will in time
deadhinge it.

Try a rotating mirror
for observing periscope

In smooth sea should be
able see 2 miles the displacement
forces sufficient

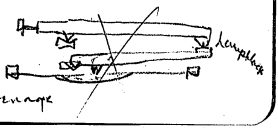
L O H working on distilling
water in Sub marine Energy
perhaps easier by freezing — hard powder
Also Expert get air from the
sea

Hydrogen Indicator
Ag phosphate with dark at
Ordinary temp. slowly
attacked by Hydrogen increasing
specially by heat at 100° C
Ag Sulfate action begins at
100 C Ag O at ordinary temp
Cupric Sulfate at 250 C
Light dont help -

Hydrogen Combines with
Sulphur without limit
at 215–350 C H S not
decomposed at 310 —

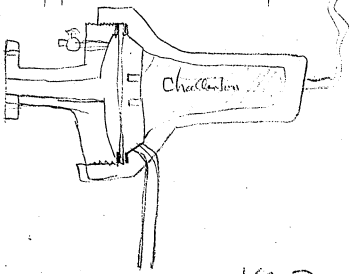
Yellow Mercuric Oxide
reduced by H at 100. C
Mercurous Nitrate ditto + it
also absorbs O

Moore

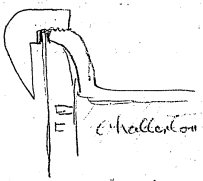


Did I give Fessenden latest patent to Kinnum - find out what he thinks about it -

Find out where all my X Y Z apparatus is -



TRANSMITTER No 3



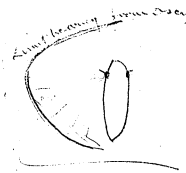
Transmitter No 1
Reg Bell 2 1/16 dia .015 from pole
No tube —

No 2 Transmitter
Same as No 1 but has a equalizing pressure tube 11/64 dia 34" long

Sims Sangs periscope has very little range although coming tower crew can see it well enough but it sings he cant understand limited range of periscope — speeds 21 knots

Continued

In heaviest typhoons in China Sea no waves motion felt by a submarine 75 ft down in deep water & 100 ft down in shallow water.



A M Kennedy
Care Charles Irwin
Union St Red Bank N J
Phone 3 Red Bank

Buoy - Collapsible boat or Quilt -

Little Press in Lab -
Ram 5"
plates 10 X 10
2 steam plates 10 X 10 X 3" thick will take about 4" piece between —

Dives on Subs continued
at 8 to 11 knots sub emerged
Depth charges / 800 Tons up
These are / the 400 ton subs
been of / 15 knots on surface
10 below / 10 knots submerge
100 to 300 yds

Days different see sub on account of dark back ground of the water (note this)

Bottom of hull to top periscope 40 to 42 ft. say English boats are certain to sight any periscope in their order of report but they can

Come down at night + lay on bottom in daytime —

~~I~~ will now house the periscope — proposed by Shirley has long one so he can shade it up + up + yet see maximum so do can 30 ft so Royal engineers can train him — our Naval people conceiving but for Dalzielhoo
(Note use flax tube behind earth
Periscope mirror & go up 100 ft)

Sub must submerge 60 ft to 65 feet of Dreadnought —
(Note they take the Center of Hull as depth —)

~~German subs not for change at night but only in day as disengaged yet then at night from mass —~~

(German use KCH to keep air ok for long submergences

~~Torpedos used a 18 allowance 3 seconds in cylinder —~~
~~Throttle used from cylinder~~

~~Bubbles show the [illegible] the torpedo —~~

~~German have a transparent Observation station at sea to see ships 50 miles away~~

Found — Sound goes Varying the Capacity

When periscope up waves water & Vibrates head so can see Warship 6 miles yet objects are indistinct ~~they~~ so sub marines are seldom seen when sea rolls [illegible]

If get smooth bore column so perpendicular goes straight make a pivot perpendicular with connecting chain inside, with nerve a little [illegible] strong [illegible] connecting [illegible] of separates. This to hit the pressure face of submarine

Vibration of pressure plate. Rods forming safety seal on top of stalk must give a note. Connecting lever must bend the stalk to which it is screwed + give a note, splash of water against the sides of ship by the pressure meet for the hull + give note.

Make a 4½ inch disc thin with inner edges + thick phosphor bronze at all mounted on the main pipe or 4½ column.

If submarine lays on bottom. a buoy near end containing hear gyroscope + lighting motor.

Send out green or other monochromatic beam from arc light along the horizon at 2½ mile + rotate + vibrate at an oscillation, Use a slit + long small tube fixed to each arc movement then observe the time in spectrum Reflected from periscope

Vessels should move them danger zone slow speed or rest when the sea is rough either increase or rapidly decrease speed to escape Calculations of sub's course and of Gear,

Any experiments of a periscope 4 ft above water observed by a glass out of focus to widen out, possibly a lense could be made to widen periscope image many times.

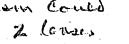
Looks to me should observe periscope from glass porthole almost in line with sea to utilize the sky line as distinguishing. Convolution Earth was bad for them as for me a

they would have to raise periscope up.

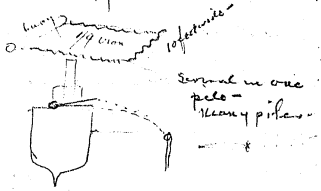
But if we go high upon mast or be can just see mast or top he will be in distinguishing also,

If splash lense gives 2 images of a periscope what split lenses 10 by cut up have lense split in 10 places & get 10 periscopes images thus making them conspicuous to searcher.

possibly with person could bring these from 2 lenses Each having 10 splits + add them


would be edge of a ship - + easy to find

Experiment on Chess



Shoot these along ship when torpedo screw

Have a small 10 ft 20 inch Electropower boat were to beat leading to lower & when see on Coming send out & hit & Explode it speed 40 miles hour. 200 H.P. high Voltage so small Cable - cleared from ship ~~[illegible]~~ hold it near Torped & Explode it.

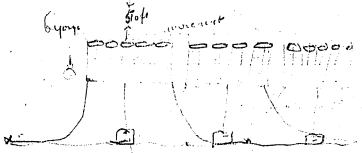
Shoot Sharpened wheel 1½ inch beat instead of Sharpened ~~[illegible]~~ substitute ~~[illegible]~~ Can of the surrounding air to burst into spray to smudge periscope or dry Lampblack so they Cannot see then the snake if they go down & come up again all will be washing & Screw plug them again - so no accuracy is possible for shooting torpedo —

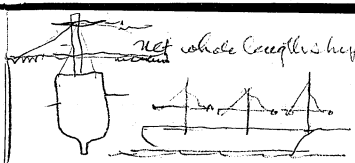
Cant a rudder be fixed in front of a ship that can be dropped in Case of Emergency so as to turn snake or a screw with Extra Engine. —

Armed Boat

300 ft boat 15 covered over
boats with 1/4 sheet iron
down to her draught.
put these 30 boats out
when danger zone reached
& tow to safety.
Known to fog power.

Warning for Subs only no damage
to Royal Navy – Warning but release bombs





float ways & edge ways
with float.

Washington Information

1 = Sub M running submerged can
detect vessel on surface running
at average distance of 1500 ft
Detected by Moore plane, quadrant
receiver or directly connected from
Hull of boat,

Noises quite readily detected
in trunks of Hatches which
appear to act like a Helmholtz
resonator

Vessels running on surface
can detect other vessels
running on surface at times

up to 1500 ft but not so well as when submerged 6 knots
a surface vessel 64 one running
submerged

Test Mr running submerged at
6 knots do not make sufficient
noise to allow of its detection
at 600 ft even when position
is known but any detector
supplied to Ships

Mr Williams of Sub M Squadron
had a special Records lowered
overside of a small boat to
detect a submerged vessel
without any result

Have a depth gauge put on
Submarine ~~Bay~~ Bay

Look out lady don't turn with
waves

Dally test Crystal Lake
300 ft in 65 seconds fresh
water. 4.615 ft sec

Sub M information
Boats G4 1250 @ 560 Revs min K boats
146 @ 374 G1-2-3 boats
152 @ 400 E1 150 to 340

Foreign Sub entering American
waters likely to run slowly

Main driving motors direct on
shaft — 2 screws They do not
run equally together 3% diff
Boat, Lead out driving hence
in boat is pos propellers
[illegible]

Commutator segments
G4 — 124 each 2 Commutators
to Motor — Diameter 17½"
G1-2-3 — 288 bars Dia
27½" K1-2-5-6 252 bars
Dia 24"

Number of Poles G 4 6 each
G 1-2-3 8 poles (interpole) main
K 1-2-5-6 6 main poles
Ventilating 4 —

Motors & the three main driving are — Running when submerged
Some Continuous some intermittent
Pumps — main & adjusting
intermittent or gears
Also Ventilating Continuous
direct Connected Gyro
Compass - Motor generator
Dynamotor Voltage Regulator
d c rotor, all Continuous
direct Connected
Motor generator for Fathometer
Oscillator direct —
Intermittent steering gear
Motor, Continuous or intermittent

There is a perceptible humming
noise when running

submerged from Gyrocompass
Outfit — adjusting
pumps in Central & Central
Dept of K boats — pumps in
pump room, Main Motor
Commutators in Motor
room

Vibration is felt on touching
Hull with the finger as a
slight tremor + periodic
vibration at high speeds.

No knocks or jolts except
from pumps.

Sound of screws can be
heard in after end of boat
also Throw Oscillator

for full information apply
to Force Commander of
submarines —

(41)

Pendulum – 39.1 2 sec (18) right
1 left 1 –
1" long 6 per sec
Square of the length –
independent of the weight of
the Bob –

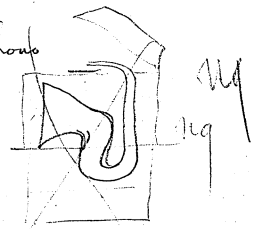
Curvature of the Earth

½ mile	~~·336~~	·165
1 "	~~1·32~~	·66
1½ "	~~2·97~~	1.48
2 "	~~5·28~~	2.64
3 "	~~11·88~~	5.94
3½ "	~~16·15~~	8.07
4	~~21·12~~	10.56

Piano notes

32	96	144	240
64	106⅔	160	256
72	120	170⅔	512
80	128	192	1024
85⅓		213⅓	2048

Dia phone



Longer horn to cut out secondary –

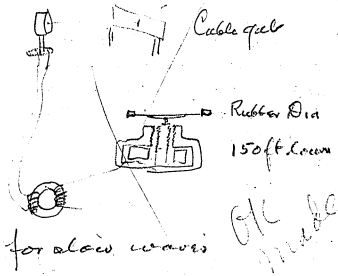
Weight of air in a resonant column which acts as a weight on the diaphragm

		4½"	2¼ in Column
37.5	Vibs sec	40	8 grams
75	"	20	4
150	"	10	2
300	"	5	1
600	"	2.5	500 milg
1200	"	1.25	250 "
2400	"	·625	125 "

To make Wood flock but about
Wood Dupont wood flow
with sulfite undigested
then dry then will decorate
Clothes given no just what
we want + can use 1/2 the
amount,

Check telefone —
Try KOH with various oxides
— valuable therein
Pb Sn Zn Mn Al Bismuth
Hg Sb — also worth,

Test the Cable galv by
touching Beck telefone,
dia scrap gives definition
measure resistance,



Ask Kneeman if it makes any
difference how Check the
pendulum/lo head is,

Cocaine Morphine or other
paralyzing Narcotic in bottle

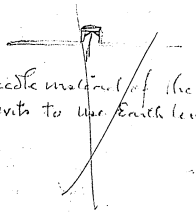
Automatically Controlled
Machine gun at a distance,
Electrically —

Tetrachloride Carbon or
other chemical solution
for hand grenades.
Must be ready gas.
Stupefy third at Lewis.
Second percussion and wire
settle. Second chlorinated
hydrocarbon never stupefying
powers,

~~Use Sulphur fumes~~
~~Trey Column & chem in~~
~~shells~~

Send out an Oscillator
512 note get echo on tuned
resonator & receiver 6
Lighthouses on sec of Government
has Extra Oscillator
Beg Bell Wright answer
bad with a Tuning

Compensating use the wheel
Pendulum for 8 sec to
10 Second for

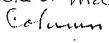


a needle mounted of the wheel
on pivots to use Earth lens as a
Lens

on a Wooden Mag

Make a Magnet over the
10" Column

Submerge Camera at Hook

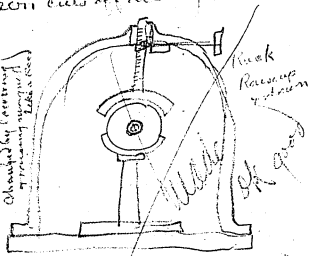


see how far + deep

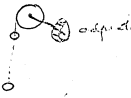
Try Experiment of observing reflection over seats thrown into lake & lake advantage powerful vision to find periscope — Build & cover a section to throw into circle & move it along horizon

Try lot these Experiments, also through long left blackened 1/2 1/4 & 1/8 tubes —

Try slits on these tubes so pass cuts off rock heights

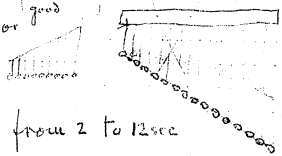


Make several Pendulums from 1 Bunsen swing to 12 per sec by adjustment 1st long hard to per second of clicking make adjustable.



Just tried this with alum thread it looks good

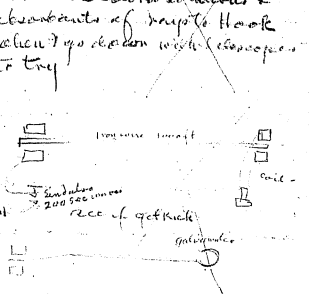
or



from 2 to 12sec

as most of light from water is polarized try Nicol prism on also Tourmaline or other substance to wipe it out from vision perhaps see periscope better possibly Eye more sensitive.

Tests all the Colored solutions & absorbants of Inspector Hawk when I go down with Stanopes to Troy



See Proc Roy Soc 1890 p 447
p 122 Fleming Vedrus

With $4\frac{1}{2}$" Column $4\frac{1}{2}$ dia .005 mica 1" diaphragm vibr & Bell fong, receiver $\frac{1}{10}$th inch away. With Non Diaphr Bell 8" away from prong of fork the loudness of Strait Bell against ear and there Column is the same. Showing that great amplification as against .015 mica + .100 in Column — must be at least 6 of at least 6 of at 10 times or more

Must get a balanced Bell dynamo so big thin diaphragm not distorting

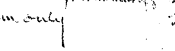
Even 1" tube in 13 min don't let water in vertical & horizontally too much noise When whole Column of liquid used Cause noise is throttling & not due to tube. If let in unthrottled pressure OK

(5.1)

Working Scale -

Scale beam with pans on 13 per cent
" " pans off 16
" " pan balance off 24
Beam only 29

We added on a weight of 40 grams consisting of a ring of lead on the 4½ div on the ½ column obs Mica Bar



It was just as sensitive best at balance the C & Sugar frogs ~~[illegible]~~ Reg 26.6 with lead 24.1 or 2.5 inches shorter ~~[illegible]~~

Weight on middle Mica Obs column — Magnets 8" away. 1/10th. with lead ring on we put bale weap to within about 1/32 of inch div.

it may be scale weights would be bad for very high rates —
Lead ring put on by Beeswax possibly lead dont follow warm but wax does mend up in Beeswax like our phone floating weight

NOTE when we had magnets 8" away got it OK - without & with lead ring but when the magnet was only placed closer to the 1" div of beam 1/32 instead of 1/10" it put so much tension on Diaphm that we could only have it at 3" adjustment from fork of magnets showing enormous loss of sensitiveness

We must have balanced no tension Diaphms in Water & in Column phones —

Very took off lead ring & then instead of drawing the Column magnet away 100/1000 as in first good test which he got it Magneto 8" away he set it 170/1000 away & at a point where it just perceptibly swayed diaphm. He found that the closed head at 8¼" away of Magnet showing a again notwithstanding Recovering magnet power was very much reduced probably 3 times weaker

This shows enormous importance of an iron strengthed diaphm in all cases or near experiments

Using reg .005" mica dia we have been using but nothing on a 2½ inch bell diaphm instead of 1" Column was 25.3 instead of 24.1 with 1" diam. Sensitiveness was 6½ inches away of Magneto from fork instead of 8 inches

Distant Rec from 1" dia 170/1000.

We are using a ½ x 7/32 Vent valve in this 4½" Column to let air out of it quicker

Its a slat valve -

Column varies ½" between closed & open Vent varying according diffrence in temperature 7/32

Equal to round hole 5 7/16 ths

In the above experiments always the Column phone & a listening phone for comparison in the same circuit

4½ Column Double balanced
phones, 005" mica - one inch
iron discs on each side of diaphragm
from only 003 thick -
best was could get When discs
were 031 away from magnets
was 7½ inches away from
fork of the magnets
Column with Dow 660 phones
30.6 - Vent hole plugging
Vent hole by pressing phones
Cord into Column away
have a milliohmeter to do work
this BIG change of Column
Note in this test only total iron
of armature 006 whereas it
showed 62 024 The increased
flux changed inductance
sensitiveness
In above experiment was reversed phones
and used them Multiple + series -
Series gives 3½ Multiple 7½
showing too much Res or impedance
when in series.

passing resistant heat through a
strip like Tasimeter showed
expanded if it is a perpendicular
heat like chrom Ele + hummuts Elec
smoke detectors Cutting

Multiple Telephone system -

10 forks. Separate phone in front
Each all connected in series
+ in line, Keys short ck all
at other end 10 phones with
adjusted Columns on phones
holding Tuners

The length of the Column
is a function & depends
upon the Combined
Elasticity of the air
Column & the diaphragm
005 gives 26.6 002 gives
23.3 = 2 1" iron .012 thick
Electroplated chrome
The 005 sensitive 11/2
002 " 13½ Highest yet

for good funnels Tapered should
rise 050 per inch of length

D'Bergn Horse for 4 12" funnel
+ with Column brakes repair
Ship not Completely Lackenuff for
Weather - 050 - Repair weather

Important to find out why -
with all valves Open except 1 were
to Column Regulator gives
The 250 Vel set Diastolic
but low? investigate

Suppose instead of magnet
at Water Release a heavy
leaved charged Condenser
to use & our Column
Worked by a valve

10 ft buoy with net
round around of length
of ship & slight twist possibly
to buoy on surface
when ship rises
fire every 5 sec
Torpedo 10 ft second
should fire not to
be 50 @ 100 ft from
Ship - use black
powder along gun
French load.

Think it will survive
without first & duke-in
on End or things that
not as sensitive

1/4" Extra flexible soft iron wire Cable

Torpedo

Submarine

Electric Motor boat
20 Miles hour
Wire or rope paying out
Dropped from davits
+ get in range of torpedo
Slowed down come,
Pump explosion motor, 100 HP.
2 ft draft 25 ft 2nd Det 20 ft long
drebs edge Guide, controlled
by Cable - cable hardcoat

Boat: can day be permanently
near boundary run by ships
dynamo + towed when
get in Danger Zone

Dunwoldie, Berkeley Cancer
Evap. of permanents of safety
oil in Raising [illegible]
use Zomphyr BP Recess
Sil so it will slow
persons [illegible]
a little longer

Mason put turbine on other
end of propeller

Etc

So the wooly jacket twist

Try blowing dry aerium +
lampblack together - also China
Clay
get some Saponin + blow air
or aerium Illuminants in fine mesh
Scrap [illegible] Saponin + Grap
with China Clay

or charcoal fine
[illegible]

also phosphorelled hydrogen -
get phosphide + antimony to work
set Tar, also asphalt on fire by
overheating, + then a match in)
If any these work - use mortar
4 fire 1 wood ft head of tank
both ends of valve & blind
all sunshipping when a
rowsemple or beam, or
phone a steam launch are
near

get man for Dynamite plating

find out all about Dynamite
Buoy Cannon & Rope,
powder used Measurement
4 size gun / rope etc

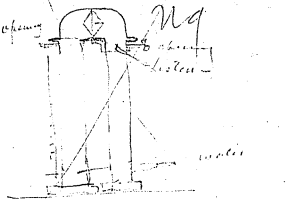
get power required for
submerging speed
ordinary for submerging

40 KW

Probably all hydrocarbon
gas lamplight which
electrically lights
hence no -
without mixed with some
gas detachably or
steam blown in
flame -

try white phosphorus
with and without
atmospheric water vapor
consisting of strong
sulphuric Iron + HS
gas - blown together

Maybe double Column



Hoffman - take seed screened
powder put in mixer and at
for every 8 lbs powder
8 oz of Hoffman Clock mix
well -

Test the shutter see if cover in shutter
+ binder well work finish to try it
one has bag touching bump

Hoffman M & Jenkins
not ground perhaps 2
C. only from Dryer

See if Hoffman blower swells up
with water - at it. The Chalk
that usually swells '

find the heaviest gas that is gaseous
at 36° fahr for Resonant column
Chl Methyl -

Patent present block + second
process General process
Mixing fibre after main powder
made weak

Grind some wood pulp +
screen it so fine separate fibres
but not chalk fibre
add to screened powder

Some notes on the Piano strings
turned up plugs into strong
Vibration filter notes gives nothing
Transversal definitely see in Common by
see in hand cut which it is —

Very slow blasting powder

Nitrate KOH	40
Sulphur	30
Charcoal	30

So slow no longer used

Reg Blasting P is

Nitrate KOH	62
Sulphur	20
Charcoal	18

Very slow Nitrate Na 63
Sulphur 16
Wood charcoal 23

Employed in quarrying
Ass locality N H Gypsum
Either by heating mixture
Shocks or friction

pressure in closed vessel

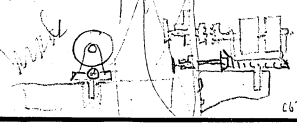
Density of Chge 0.4 1613 Kgrms
0.5 2401 "

In Common Reg service
powder Vel of Combustion
0.32 metres per sec

French war gunpowder (black)

Loaded with 7.5 inch mortar
angle 45° weight ball
65 lbs powder 3.2 oz
should go 1312 ft if
powder is OK

Buoy – 1st Magnet rotable funnel
on piece holding funnel –
2"



(67)

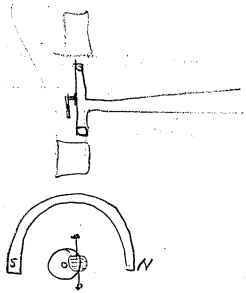
get or see US pat 939349
determining direction
of sound

Dunchin & Shadow
Hayes. get it

Try Rubber tip not
sharp cut if needed
Master -

Hoffman Grind some
old newspaper -

Also some wood fibre



Diaphragm in Center a piece of
Carbon or Aluminum or other
metal, glass disc like gramophone
Enlarged by fabric with
Mercurio mounted on top a
permanent magnet to give
pressure against the diaphragm
of a Condensed Electromagnet
Thus to be a Carbon Microphone
under water

Electro

Profiling & ~~[illegible]~~ plates
[illegible] 10" Resonance

[illegible] 4 [illegible]
[illegible] 15, [illegible] at [illegible]
[illegible] 15 "
[illegible] "
Helium 10 [illegible] "
[illegible]
[illegible] "
Helium "
Carbide 52½ Tons

Life Saving Station (Cord)
4/32 to 9/32 – Have Received
these lines 1600 ft.

~~Ark Cracker Schedules~~

No 1 Tuning Coil – 10900, turns 900 ohms
No 2 Coil – 13500 1398 ohm
No 3 " 8200 392.

Find out why our Electric Truck so unreliable - Probably fault especially wiring -

Bachman - I account, mix our Spanish plants between grade of rubber, are unnecessarily brittle & bad for Regeneration

Put up Blank Expanding alloy
1 press - 1 mixing screens
Vary spy - + Vary
1 Fuller Mill - also
Rolls for balling material
a la Victor -

See about 2 Bat bonds of Registered, what Trust Co get them & put in safe.

Listen and ~~[illegible]~~ Cigl
with 4000 then Reform
see if Glengary Urban
Electric Light & Power

For Wilbur Coleman Tires
Larger pump to run
Coleman wire Lamick & Kead
on every day by checking
Victor. Also weekly of
Sample - Probably send
to packing by hand -
get Pneumatic packing - Lapel

or Pattern

Send to Mr [illegible] of the [illegible]
[illegible] Thus [illegible] one [illegible]
small [illegible]

Dunwoodie — You must test Mr Ball & keep it Constant, be sure it should be just neutral or slightly alkaline — see B Solutions Man. If changes as made dont develop fast enough —

American Subs —

Minimum + maximum number of revolution of blades, 3 blades to Rev Counts 3.

6·2	per sec to	28.	closest possible 3
7.3	"	18·7	3
7·6	"	20	3
7·6	"	17	3

The other shaft is a multiple —

If only 1 wave per revolution then, 12 waves per second + closest possible 1 wave

---

Determine breaking [illegible] with 1 [illegible]

2 = U2 make one with Minor [illegible] [illegible] Magnet, twice as long coil of U3 —

3 = U3 — Use the 18 Magnet [illegible]

4 = Use the double hump coil + special [illegible]

Charles to take up question regarding out batteries,

Borrow an [illegible] Marconi Compass from [illegible] Board

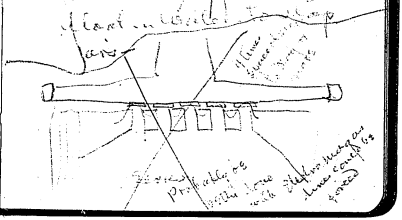
Try closed and open Reed Cement of [illegible] Questionable of Mirror or [illegible]

U [illegible] 2 gram [illegible] to Mirror see if more [illegible]

Make a [illegible] Mirror [illegible] point, see if [illegible] [illegible] point of [illegible]

Fred Old Rig up [illegible] work worm to [illegible] break wheel 2 [illegible] upon [illegible] double worm [illegible] of tumbling Carbon & [illegible] [illegible] 6 per second.

Connect a 6" [illegible] Reed & other end to telephone [illegible] see if get 6 V. 6 V if OK on Mirror [illegible] Try def [illegible] Mirror [illegible] Try Mirror [illegible]



1 Mf
1 Henry } natural period 159 per second

2 Mf
1 Henry } " 112

2 Henry
1 Mf — " 112

2 Henrys
2 Mf — 79.5

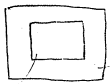
Henrys multiplied by Mfds gives frequency calculated to 159 — NG

Henrys on a magnet increases at square of turns 1000 turns same as 1 Henry then 2000 turns 4 Henrys —

Henrys are cheaper than Mf —
which has least loss?

If for instance we have magnetic ring 1/8 area of iron mean dia 1" & 100 turns we have say 1 Henry if we increase area of iron Equal to 2/8th instead of 1/8 we double the Henrys if we only used 1/8 but twice the length only got 1/2 a Henry —

ONE HENRY



1 inch section best permeability iron obtainable

wound with
5000 Turns —
For small Currents. like Telephone
Double the Turns gives 4 Henrys.

+ Eng

principle to get reading phone – Reaction direct by attenuation of friction on rotating bulb –

Resistance of Audion Bulb 7000 ohms –

~~Consider Value Vital Wattage~~

~~Recommendation Overall Recommendation~~

1.65 grms CuO per camp hour
1.60 " Zn "
8 cc per camp hour
20% NaOH.

~~14000 German Silver Iron Thermo Couples at 672 Fahr difference of temp gives 120 Volts.~~

~~7000 at 212° deg above Normal temperature~~

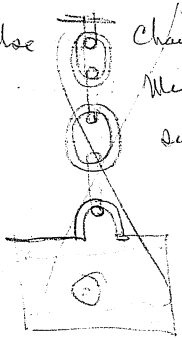
~~Consult Wm Fuwice~~

~~German Silver~~ with 72

Equipment & Storage battery
then charge very low
rate & only 1/2 charge
acc of Cost get rid bubbles
for Condensation work

Make a 1 second
& 1/2 second wheel
for Disc mechan
acc of Cam work
on Mirror 1/2 V.A for
4 cc or 20 cc
by Mirror work & magnet
or by electric [illegible]
needle or [illegible]
mon only & [illegible]
slow [illegible]

Use Chain for
Mirror Magnet
suspension



Try it

Design 3 amp cell for
electron only to be worked
1 1/2 amp 1/2 chg + dischg
rate - Metal Cells Iron
Hard Rubber pelicoat

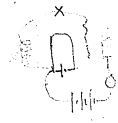
On boats with Receivers –

To Cancel Out Propeller wheel in Receiving phone use a wheel contoured properly with phone ring to generate a balancing wave to neutralize the waves from Receiving phone also Bow waves.

Higher notes will not bother if they do a phone Cut off from water and counter balance

Experiments

× also Cut in Mirror see if varies



Line choke
Substitute a transformer for plain choke

Mear. transformer: use a loop & 1 cell in Key see if Mirror responds –

Cut out Electric Current from ship & use battery on Mirror.

(over)

Scrape off stuff between CuO & Zn on cathodes — also nickel chlorid Sponge

Put 180 Lelande on 1 Audion

Open & Close a small magnet near audion & coil & key it affects it — see if it can be yet

Get audions E & West

Put Pauline 95 blind 7005 ohm or more & see if needle is lively

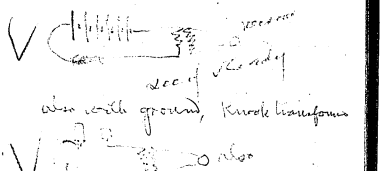
May be Wireless — Thunder Storm.

Put Crystal in iron box 2nd shelf

Get wireless Coil & make Heavy wire

See if we have Lead wire think we sent for some if not get some

Open phonopex Ckt both wires to stop wireless



Dynamo 2" Commutator
1/32 bars 1500 Rev Min
3000 sec – will not spin
Mercer Engine – to replace battery
198 Com bars

Incandescent Motor
1 Candle

Grease 125 Volt DC
Alone Motor of same Kind

Two Bar Gallery (6) in both directions
One Motor Kelly (Re Office
See No 2 [illegible]

Explode mines by bow waves
(get blue print of Mine [illegible])
5 to 60 fathoms depths

Reduction [illegible] according to [illegible] of cubic ft — goes as the cube

1"	100%	
1½	29.4	3.4 times [illegible]
	12.5	8 "
	6.4	15.6
2	3.7	27
3½	2.3	43
4	1.6	62
4½	1.1	99
5	.8	125
6	.463	215
8	.197	500

Explosion [illegible]

Screw propeller 40 KW power
Equals say a sphere 5 ft dia -
gives out 510 watts per foot -
or 100 Watts in a 6" funnel

1000 ft	gives in funnel	.000624 watts
5000	25 millionths	.0000249 "
10 000	6 millionths	.00000624 "

If Receiver 1000 ohms - then
Lord Rayleigh say can
detect .000 000 0016 watts
(the phone was perfectly
100 ohms — this would)
Take .000 000 0016 — 1.6 millionth
R is the most unreasonable
of 2 other experimenters
We amplify 27 times —

[9]

Mining (all used) on Audion

4.66 Amp hour Capacity

15 Milamp on Audion 2 hours daily will last 13 days

48 KW screw gives to ocean at distance of 5000 ft when collected by a funnel 6" dia.

25 Millionths of a Watt

at 10000 ft 6 millionths of watt

If the 'Phone receiver has an efficiency of 25%

+ this multiplied 25 Times by 2 Audions - it will give

at 5000 ft 150 Millionths watt

at 10000 37.5 " "

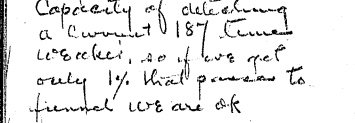
Raleigh's determination of sensitiveness of telephone is that it can detect 1/6 but

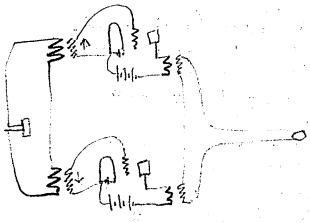
say 2 - Ten millionth of a watt.

or 1/5th of a millionth of a watt

according to this at 10 000 ft assuming Marconi's receivers are telephones, we have capacity of detecting a current 187 times weaker, so if we get only 1% that seems to funnel we are ok

Long submarine perpetuity





1 Audion cut both sides of the waves

2 audions nearly equal 3 with 1 side waves only

2 audions 5 to 1 — 1 — = 5
2 25

2 Double audions 10 to 1 1 = 10
2 = 100

2 doubles 4 times better with good Zero than 2 singles

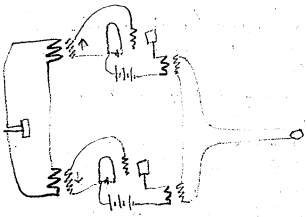
(92)

according to this at 10 000 ft assuming Marconi and receiving on telephone, we have Capacity of detecting a current 187 times weaker, so if we get only 1% that passes to frontal we are ok

Long submarine periscope

wire

Throwing cooler so can see



1 Audion but both sides of the waves

2 audions nearly equal 3 with 1 side wave only

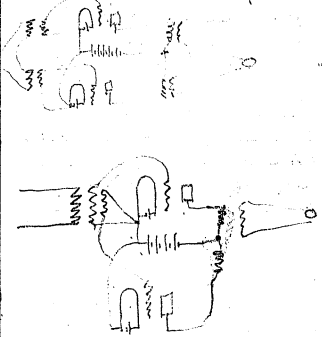
2 Audions 5 to 1 — $\frac{1}{2} = \frac{5}{25}$

2 Double Audions 10 to 1 $\frac{1}{2} = \frac{10}{100}$

2 doubles 4 times better with good Zero than 2 singles

(93)

16 n Tony



Both sides of valve action
Cou[illegible]

Best Varnish for
Coating is Amber
dissolved in Chloroform
Hard Rubber should be varnished frequently

India rubber like glass has a
great tendency to absorb moisture
& should be varnished frequently
Hard dont readily absorb
moisture.

Whenever a Condenser for Record
minutes by the Cross leaks
Then discharge Condenser all
at once then a Galvanometer

Very [illegible] with flow leakage Wires
the India rubber

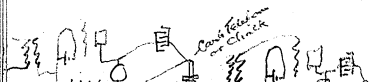
Electrostatics Cap 1 ft Cap Air
.001 thick 0.032 microfarads

Air 1 glass 1.9 Indiarubber 2.8
Resin 1.77 Gutta P 4.2
Shellac 1.95 Mica 5

possibly want of good success with small chalk is due to surface being altered for a moment by large dimensions Chalk like all Metals phone.

—

Think on our 6 Vt Sec Audion arrangement wants big choke coils like our Norway also 100 mf Condensers or more Each Audion.



or in 3rd Audion.

In Carbon Telephone think levers if used under sea should be much stiffer as strong spring — also on account of power in which leverage could be increased the opposite way

for India Ink for Carbon Telephone try Silicate soda, Potassium Silica, Tungstic & other Colloids.

For Carbon telephone diaphragm use glass disc Silvered & then paint with Indian ink — or a bottom of metal then accord glass Silvered disc & final metal. Can use .005 glass. Could do it in Vac & deposited Silver don't stick well —

Monel metal for V & agate to prevent Rust or both agate mounted in brass for strength.

If Carbon tell used in Sea Use 2 diaphragms the Sea & plus another 1/32 from it to work the Carbon

Want South signals 1st time
trenches — 1 mile minimum

Solve these 2

French hear 5 Kilometers
a occasion when sea
quiet but only 500 Kilometers
when Ranging — boat stopped
nothing when boat running
English no better

Obviously were men only need
hear bullets & hand grenades
from 50 to 100 meters deep
2½ meters apart. Cheaply

Record

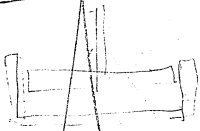
#1

Ring ½ wide full, scrape off
press ring in & rub & press
off

#2

Thes shape

3



Glen Ridge

CHJ

÷ 4 500 lbs a min.

Set ring in to fasten to top platten 1/16th in - to make a hard edge [illegible] do it on bottom, when both used make each 1/32

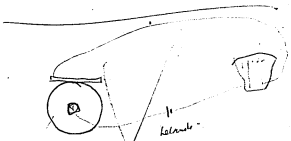
4½ wood 2½ chalk.

1261 Schedule

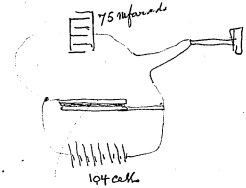
Bring right up to 600 lbs steam on for 6 minutes use water tank cooler

OD 1238 Chrom XXE

5 min Coastal - 3 minutes 600 lbs - [illegible]

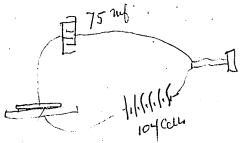


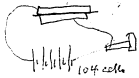
Chalk pass current & later the platinum wire are changed much / cost with [illegible] platinization shows

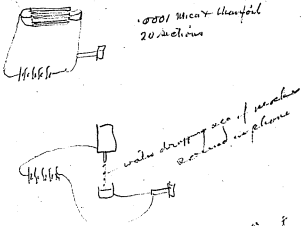


Mica Small Condenser
worked by Diaphragm

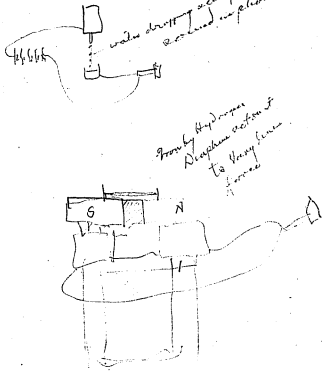
Also Carbon microphone

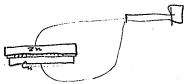






·0001 Mica & Tinfoil
20 sections



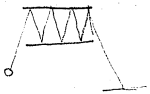


paper just slightly dampened various solutions
also other metals, agitate by dropping of any
signs with Milcrup or gluma
make several in series - use metals +
dampening solutions having great
polarization -

Good improvements. Disc Technique
1 = Edge without beveling.
2 = Nickel Moulds
3 = Thinner blanks
4 - Little less chalk - finer grinding

48" mirror - .0013 movement of point
for 1" movement of spot.
at 1/16 - .00065 —
1/16 practical —
Then Spot moving 1/2" .000325
" " 1/4 .000162
1/8 .000081
supposing no resonance assistance
of 1/16 .00004
1/32 .00002
1/64 - .00001
.015 - .000005
.0075 .0000025
probably later would build up
by resonance.
by several Mirrors can increase
throw from 48" to 30 feet

Plane mirror



Multiple reflections to get greater throw

Fix the small screen I made with 3 groups holes — 4 9 & 17 holes or so we can send to our 4 9 & 17 waves per second

Merchant Ships

Anthracite in Zone & throw smoke bbls to be visible artificial electrically 10 miles or so astern

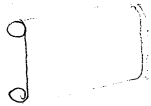
Side periscope
Small hand observing — special long
Night flashes.
Arc lamp, barium, observe reflection by glass or spectroscope

Second detector,

Get special ring needle so can use two rubbers or double the thickness in small prism —

Dunnaddie how does one get out three rubber pads some way should be provided
~~Kathleen~~

moving picture of waves -
& depend one motion in any to
necessitate sky line & transmit the
sea picture - procurable are & Exhibit
big film - have following words
& that high pressure - 3 to 4 on
Inside of ship -



Rolls Cloth several times
to imitate def sky line
Colors - Changed several
times daily

Bags + Cottonseed oil
Hydraulic get last washes
out of Lime Rengmuelfonts

Aurora Cunard freighter
full speed 61 $10\frac{1}{4}$ Knots
Screw 18.6"
Pitch 18.6 -
2500 HP - Inducated.

Pill Throw picture
on Canvas field
Sunlight Experiment

Lubowitz - Ranger finding
to locate 2 gunners
who kept talking to
each other —

Old Canal boats
hulks - loaded with
gravel stone etc
Gyroscopic steering
apparatus, towing
on Lubbers at
night 15 miles out
& let them go

pole sticking bottom
Explodes hole in &
sinks sub

Lieb, in morning asked for
Engineer go to Nuboma &
see if dirtbombs well do

Get in touch also Cavendish
Go burning girl in Zone
without disturbing
Reporting —

Looting Mwinkama to
Japs in Exchange for
some loaves of frozen
bread — dirty dirt
big German shops

Lichowitz – Range [illegible] for [illegible] – Queer [illegible] scribs talking nights –

23° Beaume .14° Beaume
like skimmed M — Mexican think.
Cheap –

6 @ 10¢ gal –

[illegible] gate [illegible]
[illegible]
[illegible]

[illegible] Easy –

Hammell Refg Co
Hammell burner Co — Patent Mfg Co NY — NY steam

Dahl – at Chicago, Woodmont

Sandy Hook N Y Central boats

Monmouth 9' 3"
Rev 155

Sandy Hook 9' 8"
Max Rev 145

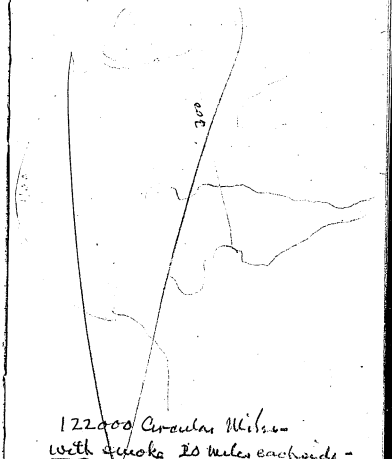
Cut off reacts in 2 minutes
18" dia 5/8 thick –
Can cut stacks quicker than take out rivets –
Portable Can go on ship –
no danger.

(115)

Capt Palfery Supt
Cunard Docks -

2nd Engr T R Stuart
SS Palma
Cunard Line
Knows a lot,

Roughly 25 subs 200 miles
from Scilly 30 miles dia with smoke
350 sub on 8 mile circle no smoke
if take smoke 700



122000 Circular Miles -
with smoke 20 miles each side -
40 miles dia - 1600 miles. 76 Submarines

without smoke - 6 miles each side
12 miles diameter, 144 miles area
847 subs arrived

Canvas along side ship 5
tiers & standard tents to increase
for good weather
22' high 400 ft long
7½ yards wide — both sides —
7500 yards 400 yards
3000 — provided 6 cell
2 decks giving 6 tiers
with trimmers matched by
the sea — can tell 1 o'clock
to use

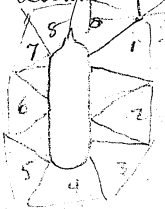
Zeebrugge - special channel
7/10th miles long 1/10 wide 500 ft
general Entrance 2.1 miles 25 ft deep
Flushing General Entrance
2.8 miles 40 @ 70 deep

~~Northcliffe~~
~~10 am Thursday~~
~~ally~~

Chairman L H Beers
Sub Marin Defense Assn
141 Broadway Telefon
Residence Murray Hill
3611 — office Hanover
4642

Max Toch
Toch Bros
320 5 ave
Painting Ships
my

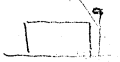
Make Binoculars 36" long
1 1/2 clear - space
spiral 1/8 high 1/2 apart
Wind black & good colored
Eye piece & rubber
the Goggles when not
working — fold them —



8 Zones
to sweep
man to
each —

0120

Try this —



Try the sheet of water

Regulate thickness to get the tint on ship.

Dimroth - make Hollow

blank (10) powder & try dilts go back to Conditions where you get 95% & try

Seebmann

Sweep horizon in Silhouette using thick spectroscope slit, if telescope is on horizon close slit

Batches of powder substitute Kieselguhr

ditto China clay

Fullers Earth

Curvature of the Earth

	miles	feet
3000 ft	.57	.21
6000	1.14	.85
9000	1.71	1.91
12,000	2.28	3.40
15,000	2.85	5.32
18,000	3.42	7.66
21,000	3.99	10.42
24,000	4.56	13.62
27,000	5.13	17.24
30,000	5.57	21.27

$$\text{Height} = \frac{(\text{Distance})^2}{42{,}240{,}000}$$

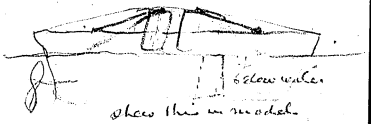
Ex.

$$H = \frac{3000 \times 3000}{42{,}240{,}000} = \frac{900}{42{,}24}$$

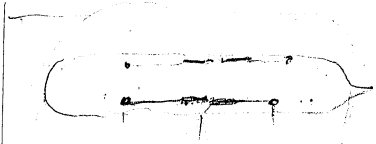
```
42241 900.00 1.21
      8448
       5520
       4224
```

= .21 feet.

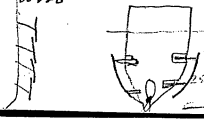
400 ft 15 deep 1/8 –
40 Tons –



show this in model.



probably 5 beams on sidewalks
Model built. 8 ft swing each.
also Consider moving Crane along rear of ship.
also



Show out.

C(25)

Motor Sailing Launch
40 to 50 ft.

Torpedos from Gunn
Quebec set at 12 ft.

Warn Palfrey
Tell Engineer
Keep Gokes light
& stop pounding
Send for Triples
B.P. Oil –

Find from Clarke about 6 inch
projectile, size weights, get drawing
of Gun & Shell for gun
1.44 projectile to try Egant
also ribs of submarine – also
Crush in strength of submarine

Jerry To take 2 telescopes,
1 [illegible] also [illegible] double
barrel of gun [illegible]

£20. to Rowland Expense
money

3" gun 10 tons per aggr in
& 4" gun 12 tons +

60 lbs wood
40 Chalk
12 Rosin
50 lbs charcoal
2 Lamp blacks

Cost Charles of Cunard & Valeria said Periscope can not be seen for much more than 1000 yards + Sub can come to surface 3 or 4 miles ahead of ship then completely recharge + by dead reckoning know just which + where to launch torpedo without showing her Periscope — Proportedship dont change her course

Disc

1 = Design a small Experimental Mixer ⊡ 6 ft long with operator & plows — find old mixer drawing — Fred H.

2 = Make blank low in Center

3 " " high in Center by using the rubber — if high make it so Edge will just about print + not crush 7" w 1/2 the area

4 = Rally — dissolve Rosin hot in Cheap oils Straw, Solvent Naphta, Kerosene, If dont work in mixer try Mentor + pitch. Pet Naph + Benzine, other cheap liquids which OK for a blank dry + make blank — try Mixer also

5 = Solvent Naphtha & coal tar pitch hard, they missed & made tar

6 = If Can use Kerosene & Rosin cost 2.12
If lose all alcohol 5.07
If lose ½ the alcohol 3.67
If use Solvent Naphtha & Gallon Rosin 2.04
Rosin & Solvent Naphtha 3.5

7 = Dissolved in by Cotton flock

8 Meller, make dispersion on Regulator —

9 = Mixed - Try Solvent Nap. & Ammonia alcohol with Rosin in small Challenge Mill — Anderson

10 Set up differential Rubber Rolls in #4 lately with Water

11 = fine grinding requires more Rosin — ~~Have~~ batch made with 15 Rosin —

12 = Batch in which China Clay replaces Chalk —

13 Batch in which Fullers Earth replaces Chalk —

14 - Emulsion of Rosin in, Kerosene & my dispersion,

15 = Investigate Kind of Mixer at Glen Ridge —

16 - ½ dried Rosin - ground & dispersion they rather ½ - dry & 2 Rosin —

17 = ground Rosin & Chalk regular proportions together in Mortar then add Wood — no solvents

18 - fine powder bottom scrape! Then unground powder screened some (?) pel balls out, Scraped finish with fine powder — 2 tools — Special —

19 - Rolling in Rosin in Coarse powder & then grinding is wrong in principle should ~~Sitha~~ grind in bowl & screen then Mix chalk & Rosin & use lastmost screening

20 bricks at 1000 Cold then put heat on then Cool Very fine 1000

21 = Pack some mould entirely too much in Middle 7" also opposite also more on one side then let it lie to see what Causes Center Cracks across & Crack

---

22 Hold blank till (little) Colder let Rosin is hard Cracks may be due to want of adhesion of brown & springs up a Crack — also very Cold when pressing —

23 Daily Reg powder ready to load, Mix 1/2 of what originally in order

24 – Re wet neg powder &
Re dry 1 deg / bring to
mix the Roscoe Leech
25 = Edge more carefully fed in metal dry
out

Solvent Nap BP 138 to 160
or 284 Fahr to 320 Fahr
Send out BP Fahr in
27 to 28 inch Vacuum

Dur Solvent Naphtha BP
280 Fahr 137.8 Cent,
in 27 inch Vac
all come over at
170° Fahr with a violent
Recoil — This is low BP
Solvent Nap

Uncle Harper man in charge
that publication full of
Mistakes &
Tell Wilson to see
Moving Picture people
& fix it up

See how they show
powder blanks would
in press of knocked on
pins board.

1/8" sheet iron both sides 500 tons
300 ft of bright sides

Plates	51000
40 knees 2 ft x 14 ft long	4000
Castings	2000
250 fathom chain	6000
Add 5% rivets etc	4000
	67000

33½ tons
$150. ton $5000.

Canal Dry Dock
takes 1½ hours after boat
is floated to pump dry –
12½ c per gross ton for handling
at cost,
10c (ton gross) for each day
in dock
$2040. for gross tons

Only necessary to cut ships
to a 24 ft 66⅔% vessel
or 12 ft eye gross Vessel
Where practically Every ship
is schooner

Orange – J. Simpson
Tel 5333J –
5333 J

Running 600.550.500 lbs
" With Square edge
" Sharp Edged blank
and 3 hour contact with steam
on 100 lbs then 3 min 600 lbs,

If 30 boats per week sunk

Saved by Smoke 10%	3
Camouflage, Skyline paint and paint 25%	7.5
Smoke & halts. 10	3
Plate painted on 25%	7 5
	21 – 0

21 boats saved –

After Edging blanks annual in ocean 150 for 2 hours may take cracks not as ? million cracks come in when transferred on machine

Find out when paint of boat is Belgian Prince Smoke equal to sunken in Sun Hang ?

Prutsche Lake

Load press
Bring in contact
put steam on lot it run up to 200° Fahr then put on 600 lbs pressure for 12 minutes, cool

Natoma 120 > 3 Cabins
17.6 – 6 ft draught
Motor yacht,
3 Cylinders 1 6 cyl
on top – OK guard
outside track

~~Helendale~~
~~Leander~~ Regular Steam
~~130 ft~~ – 17 – 6.5 draft
Good, well kept
Small house
aft on deck

Dachem 192. SB

Torpedo 3100 ft min 48 ft second
Merchants 1050 ft min 17.4 sec

Liquid CO_2 in cylinders in place of oil for war ships

Report to Admiral
8000 yards near Torpedo
boat ~~[illegible]~~ water
brake –

Water brake to stop ships
in 1½ @ 2 lengths
after hearing torpedo
track [illegible]

C1415

Expert with launch with
Water brakes, see if any
[illegible] in the water
brakes.

Francis Rockland
Tarrytown N.Y.

Merchant Ship
Stop Eng & Reverse
1 min
To turn ship to port
from full speed ahead
Stop Eng & reverse
3 min 1500 ft.
to turn to 90° 1½ min
180 turn 3 min

T Ashley Sparks
Agt Cunard Line
24 State St NY

Rayburn man to make smoke
shell for one 1½" gun

Torpedo 50 ft sec
780 ft
Radius
415 ft
45 ft

1115 ft

present rudder turns 90°
in 1½ min 1870 revolutions
with bow rudder 700 pounds
Torpedo 1000 yards

Present Rudder 150 sq ft
bow rudder 200 ft

Result 4 shots fired at target 6×6
7/64 sheet steel

#1 – went 7 ft thru water, went thru steel 1/16

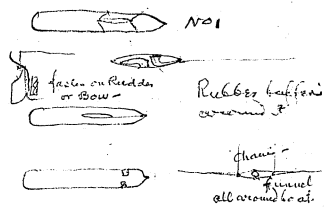
#2 went 79 ft " penetrated 7/64 plate + dented 2nd 7/64 plate

#3 went thru 100 ft water penetrated 7/64 steel + also 1/16" sheet iron all above shots fired with 70% of service charge Velocity on striking about 1500 ft second

#4 tried with full service charge did not hit target, rocks skidded,

Cut piece lead 8 lugs projecting .005" into bore

projectile in #2 & 3 shot hit water between 50 & 100 ft front of target Weight of arrow .553 lb
1/2" dia on 10 lb arrow would penetrate 5/8 steel



Possibly can put a rubber dam outside pump air out + cut hole in Vessel + feat in twist.

–

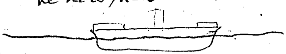
fix launch up if it draws enough water + put in funnel. Launch probably makes lots of noise –

Have an imitation whistle made to be used in testing the men listening. they giving a bell signal

perhaps X bring full water under a pressure of same depth that the high note will pass from the steel into water unimpaired in strength + hole may not be necessary
Can secure box to side by lip bolts,

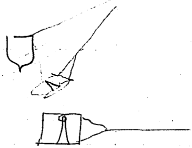
Hutch about Chlorine in Sub along Conn Coast Aug 15 — find out about it

Kennedy to close End his funnel with a steel plate see if makes a difference order another funnel so can bolt on this plate Same size funnel he now has —

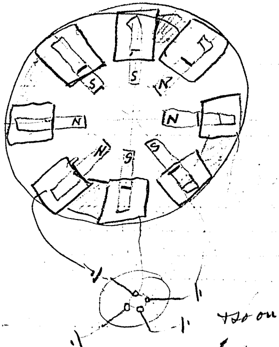


Tow it 40 @ 60 ft below — very smooth wire armored Cable + Verna Ru... to keep it down — possibly rope Manilla with wire in it

or



Wedge shape.



+ so on

all separate

Moore Microfilm Res 82 Chem

Launch 16 ft – 6 miles hour

with Kite rudder

Ensign Geo. L. Cathin
Room 3735
120 Broadway
Telephone Rector 6020

3 pm Congressional Limited – Park place go to Junction –
~~Sunday pm~~
~~Without Wheels~~ –

400 yards hear torpedo when launching
1000 yards hear in 1 sec
2000 yards hear in less than 10 seconds after launching

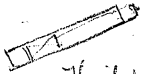
See President 4 pm Wednesday
Daniels –

Ask Daniels for 3" gun
Naval or Army – worn ?

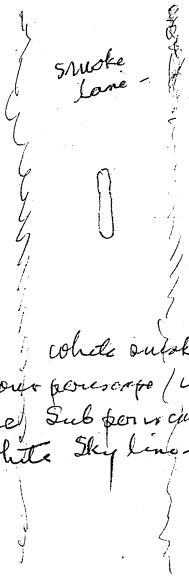
About Baker

102

Want 1000 ft 2 Conductor
Lead Covered armored
telephone Cable
made by Safety
Insulated Wire Co NY
made for Navy Dept



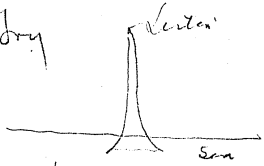
Thick ½ hydraulic
Shelby Tubing shoot
out a smoke pot small
size 1000 ft ahead
last 10 minute test
lots smoke - shoot in
advance of ship



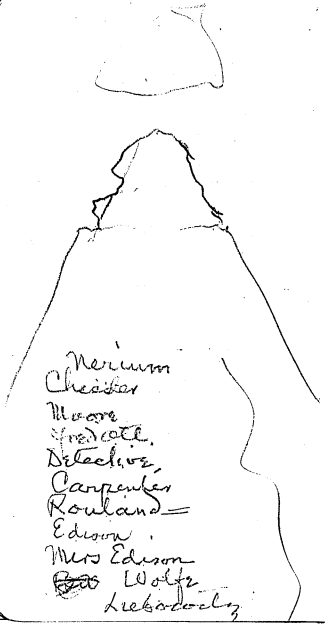
white outside profile
as our periscope / wire
and Sub periscope against
white sky line -

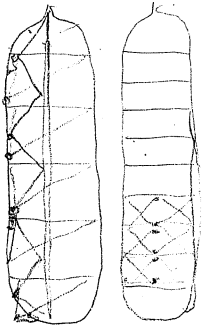
C150

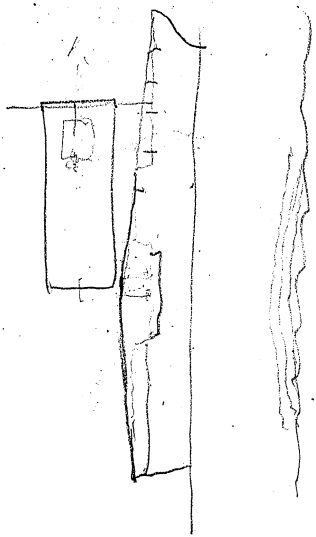
Jory



1st month


Nerium
Chester
Moore
Yradcott.
Detective
Carpenter
Rowland
Edison.
Mrs Edison
Wolfe.
Lebardoody





L 1000 —

4 | 250.
60

2000 —